

10/030907
13 Rec'd PCT/PTO 14 JAN 2002

9' waveguides and reflects the other of said odd and even wave length components through the other of said at least second and third waveguides.

92 5. (amended) The filter device according to claim 1 wherein the optical branching means is an optical coupler and said at least one odd/even select filter means includes a first filter means optically coupled to said second waveguide for transmitting one of said odd and even wavelength components along said second waveguide and a second filter means optically coupled to said third waveguide for transmitting the other of said odd and even wavelength components along said third waveguide.

93 7. (amended) The filter device according to claim 1 wherein the optical branching means is two optical couplers and said at least one odd/even select filter means is a first filter means located in a fourth waveguide optically coupled to said two optical couplers and a second filter means located in a fifth waveguide optically coupled to said two optical couplers in parallel with said first optical fiber, said second waveguide being optically coupled to one of said two optical couplers and said third waveguide being optically coupled to the other of said two optical couplers.

11. (amended) The device according to claims 1, wherein the first waveguide and the at least second and third waveguides are optical fibers.

12. (amended) The device according to claim 1, wherein the odd/even select filter means is selected from the group consisting of: a chirped Moire Bragg grating whose index modulation has been selectively erased at pre-selected locations; a sampled grating; a chirped sampled grating; co-located gratings; and a series of individual gratings.

94 13. (amended) The device according to claim 5, wherein the odd/even select filter means is selected from the group consisting of: a chirped Moire Bragg grating whose index modulation has been selectively erased at pre-selected locations; a sampled grating; a chirped sampled grating; co-located gratings; and a series of individual gratings.

14. (amended) The device according to claim 7, wherein the odd/even select filter means is selected from the group consisting of: a chirped Moire Bragg grating whose index modulation has

been selectively erased at pre-selected locations; a sampled grating; a chirped sampled grating; co-located gratings; and a series of individual gratings.

15. (amended) An optical filter device for multiplexing and de-multiplexing an optical signal having multiple wavelengths, comprising:

a first waveguide and an optical branching means optically connected to said first waveguide, at least second and third waveguides optically coupled to said optical branching means; and

at least one odd/even select filter optically coupled to said optical branching means for either

94 i) splitting an optical signal launched into said first waveguide into its odd and even wavelength components with one of said odd and even wavelength components being transmitted along one of said at least second and third waveguides and the other of said odd and even wavelength components being transmitted through the other of said at least second and third waveguides; or

ii) combining optical signals launched into said second and third waveguides with said combined optical signals being transmitted along said first waveguide

16. (amended) The filter device according to claim 15 wherein the optical branching means is a fiber optic circulator and said at least one odd/even select filter transmits one of said odd and even components along one of said at least second and third waveguides and reflects the other of said odd and even wavelength components through the other of said at least second and third waveguides.

17. (amended) The filter device according to claim 15 wherein the optical branching means is an optical coupler and said at least one odd/even select filter means is one filter optically coupled to one of said second and third waveguides, and wherein said at least one odd/even select filter transmits one of said odd and even components along one of said at least second and third waveguides and reflects the other of said odd and even wavelength components through the other of said at least second and third waveguides.

95 18. (new) The filter device according to claim 15 wherein the optical branching means is an optical coupler and said at least one odd/even select filter means includes a first filter means optically coupled to said second waveguide for transmitting one of said odd and even wavelength